"Characteristics of the U.S. Broadband Market"
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Slide 1: Title slide

Broadband access is the key to development and growth in this digital information age. It's a key that can open the educational and economic opportunities of the world to rural communities across America, helping people to enrich their lives. That is why facilitating access to broadband is one of the core policy goals of the FCC.

Our Congress shares the FCC's keen interest in promoting broadband deployment. Section 706 of the Telecommunications Act of 1996 directs the Commission to remove regulatory barriers to deployment and to take other steps necessary to stimulate infrastructure investment.

We have been actively pursuing this statutory goal by removing regulatory impediments to investment by wireline carriers, allocating more spectrum for wireless broadband services, and adopting spectrum policies that foster the development of other broadband technologies.

It is increasingly clear that broadband technology will fundamentally reshape the way we communicate, the way we work, the way we learn, the way we receive health care, and the way we are entertained.

Slide 2: Internet Growth – US Households Online – Chart

Since 1996, there has been a dramatic increase in investment throughout the communications sector.

As you can see here, investment in the Internet has exploded. Internet access has increased from 40 million households in 1996 to more then 170 million households today. An astounding 99% of public schools now have internet connections.

Slide 3: High Speed Line Growth 1999-2004 – Chart

High speed line growth has also been drastic and dramatic. As a point of reference, in the United States, the term "high speed" describes services with more than 200 kbps capability in at least one direction.

This growth is due in large part to several steps the Commission has taken to promote deployment of new broadband networks.

As I will explain in more detail later and as my colleague Jeremy Miller will explain in much more detail in a separate presentation, we removed unbundling requirements on newly deployed fiber to the premise and we also provided regulatory relief for new hybrid fiber-copper facilities, deregulating the fiber and new packet-based technologies that provide broadband services today.

And the Commission has pursued innovative and flexible spectrum policies that enable new broadband services to flourish.

Investment in broadband in particular has been vigorous. As you can see, as of December 2004, over 32.5 million high speed lines connected homes and businesses to the internet – a dramatic increase from 1999.

Slide 4: Cable vs. DSL broadband subscribers in the U.S. – Pie Chart

Competition among our broadband platforms is intense. Of the 32.5 million broadband connections in the U.S., most are through cable modems, but DSL connections are not far behind. Fiber, wireless, or satellite technologies make up the rest of the connections.

Slide 5: Historical Residential Broadband Market Share DSL/Cable 1999-2004 – Chart

As I mentioned previously, the Commission has removed unbundling requirements on newly deployed fiber to the home and fiber to the curb and provided regulatory relief for new hybrid fiber-copper facilities. We were able to do this because, unlike in Japan, competition between cable modems and DSL is fierce.

The competition between DSL and cable modems has been lively for years, with the gap between the two narrowing. However, cable modems have always been the choice of more consumers. In each quarter for the last 4 years, 2/3 of new subscribers have gone to cable broadband. This is attributed to the high number of cable television subscribers in the United States. Cable television remains the predominant technology for the delivery of video programming covering 71.6 percent of all those who watch something other than free-to-air television. 97 percent of U.S. television households are passed by a cable system.

Slide 6: Cable Modem Growth in the US 1999-2004 – Chart

This chart shows the exponential growth of cable modem growth since 1999. Today the use of cable modems stands at to 18.6 million lines, up from only 1.41 in 1999.

Slide 7: DSL Price Drop (Verizon v. SBC) – Chart

This vibrant competition between DSL and cable modems is what enabled the Commission to deregulate the provision of DSL without risking an increase in DSL prices. Since February of 2002, prices of DSL have dropped about 40%.

Slide 8: States with FTTH Deployment – Chart

Fiber to the home is also spreading in the United States. Twenty of our states have fiber to the home deployed. We expect these numbers to increase with our decision to remove most unbundling obligations for provision of fiber to the home.

Slide 9: FTTH Homes Passed – Chart

We are just beginning to see the positive impact that our recent broadband unbundling decision has had on the marketplace. As you can see, before 2001, less than 200,000 homes had access to fiber to the home in their neighborhoods. Now there are nearly 1.4 million homes passed with fiber. These homes now have the opportunity to receive the array of advanced services that can be delivered over high capacity broadband fiber optic lines.

Slide 10: Other New Broadband Technologies

Of course, DSL and cable modems are not the only way that we in the United States are getting our broadband service. Wireless broadband, such as Wi-Fi and WiMax, are becoming more and more popular. And the Commission has been working to make broadband over powerlines a reality.

Slide 11: Wireless Broadband Access Task Force

The Commission's Wireless Broadband Access Task Force has studied existing wireless broadband polices and made recommendations for possible improvements to promote the growth of both licensed and unlicensed wireless broadband services. The goal of this Task Force is to consider what the Commission can do to extend the reach of broadband services to underserved areas and to provide increased competition in areas that already have access to broadband.

In its report earlier this year, the Task Force concluded:

"To ensure that our nation's regulatory policies concerning wireless broadband do not impede innovation or delay service availability across America, the FCC should be vigilant and proactive in identifying and understanding emerging technologies and in ensuring that existing regulatory policies do not get in the way of these advances. Innovative technologies call for innovative regulatory policies. And the American public benefits most when regulatory policies enable consumers and businesses to fully tap the benefits of emerging wireless technologies."

Slide 12: Encouraging Innovation

The Wireless Broadband Access Task Force made several recommendations to help the Commission encourage innovation in wireless technologies:

- Promote voluntary frequency coordination efforts by private industry for license-exempt spectrum – such as those already successfully underway in some of the more congested parts of the country – to mitigate potential interference among users.
- Promote voluntary industry "best practices" among unlicensed users to maximize the potential opportunities for spectrum use.
- Facilitate reporting of violations of technical rules for license-exempt spectrum (*e.g.*, improper power boosting and jamming) to ensure level playing field and minimize impermissible interference
- Ensure that FCC rules are flexible enough to allow providers to pair spectrum asymmetrically to account for the unbalanced nature of broadband services, which typically

requires a large amount of bandwidth for downstream communications, and less bandwidth for upload links. For mobile services, the Commission has traditionally paired two licenses of equal size, one for upstream and one for downstream communications.

- Apply a pro-competitive, innovative national framework for wireless broadband services – one that imposes the fewest regulatory barriers at both the federal and state level – to wireless broadband services.
- Continue to take a pro-active, forward looking approach to regulation as wireless broadband networks begin to be used in combination with other broadband service networks and services (*e.g.*, regularly evaluate whether it is time to remove outdated rules, and accord an increasingly flexible regulatory environment for service providers to facilitate convergence).

Slide 13: Wi-Fi Hotspots by Location

As the Task Force Report notes, wireless broadband services are already gaining a foothold in the market. This graph shows that the whole world is experiencing a boom in the use of Wi-Fi. In just a few years, the availability of Wi-Fi hotspots has blossomed in a variety of public areas.

Slide 14: Wireless Innovations

Revenues have also grown thanks to wireless broadband. Wi-Fi and WiMax have brought in billions of dollars for companies. The revenues will only grow as new kinds of wireless technologies are developed and spread.

Slide 15: Broadband Over Powerlines

The Commission has also worked to encourage the development of broadband over power lines by modifying the rules on use of unlicensed spectrum. By facilitating access to broadband over power lines, the Commission has taken an important step toward increasing the availability of broadband to wider areas of the country because power lines reach virtually every home and community. In areas where consumers already have broadband access, broadband over power lines can enhance competition by providing another broadband alternative. Broadband over power lines will also facilitate the ability of electric utilities to dynamically manage the power grid itself, increasing network reliability by remote diagnosis of electrical system failures.

Slide 16: Largest Broadband Markets in the World - Chart

In closing, I would like to highlight the United States place in the world in terms of size of the broadband market. While Korea has the highest broadband penetrations in the world, and Japan's penetration is also quite high, the United States has the largest number of broadband subscribers in the OECD.